

INVENTORS DESIGNATION SHEET

TITLE: FAUCET WITH A DISCHARGE SPOUT SERVING AS A VALVE LEVER

PRIOR APPLICATION: Taiwan - Serial No. 091208254 filed June 4, 2002

FIRST INVENTOR: Hui-Lin CHEN (Heir and Legal Representative)
ADDRESS: No. 367, Sec 2, Tai-Ping Rd.,
Tso-Tun Chun, Nan-Tou Hsien, Taiwan

OF

Sung-Wu CHEN (Deceased)
No. 3, Chien-Hsing 5th St., Tso-Tun Chun,
Nan-Tou Hsien, Taiwan

SEND CORRESPONDENCE TO:

OSTROLENK, FABER, GERB & SOFFEN, LLP
1180 Avenue of the Americas
New York, New York 10036-8403
Customer No. 2352

Telephone No.: 212-382-0700
Attention: Robert C. Faber, Esq.
Registration No. 24,322

FAUCET WITH A DISCHARGE SPOUT SERVING AS A VALVE LEVER
BACKGROUND OF THE INVENTION

1. Field of the Invention

5 This invention relates to a faucet, and more particularly to a faucet that includes a discharge spout, which serves as a valve lever.

2. Description of the Related Art

10 A rotary knob or a rotary lever is provided on a faucet for controlling supply or flow rate of water. Such a faucet has a disadvantage in that the user needs to rotate the knob or the lever in order to stop flow of water from the faucet after washing the hands of the user. When the user contacts and rotates the knob or the lever, his/her hands may become contaminated by dirt or bacteria on the knob
15 or the lever.

SUMMARY OF THE INVENTION

The object of this invention is to provide a faucet, which can prevent contamination of the user's hands due to contact with the faucet after washing.

20 According to this invention, a faucet includes a valve tube journaled within a faucet body, and a discharge spout connected fixedly to an open end of the valve tube. A discharge end of the spout can be pushed upwardly to turn the spout from a discharging position, where an opening
25 in the valve tube comes into alignment with a water inlet in the faucet body so that a maximum amount of water can flow downwardly from the discharge end, to a

non-discharging position, where the opening is not fluidly communicated with the water inlet so as to stop flow of water from the discharge end. Because there is still some water flowing from the discharge end when the spout is rotated from the discharging position to the non-discharging position, contamination of the user's hands due to contact with the discharge end can be prevented.

BRIEF DESCRIPTION OF THE DRAWINGS

These and other features and advantages of this invention will become apparent in the following detailed description of a preferred embodiment of this invention, with reference to the accompanying drawings, in which:

Fig. 1 is an exploded perspective view of the preferred embodiment of a faucet according to this invention;

Fig. 2 is an assembled perspective view of the preferred embodiment, illustrating how a discharge spout is rotated between a discharging position and a non-discharging position;

Fig. 3 is a sectional view of the preferred embodiment, illustrating how a valve tube is disposed at a close position so that the spout is disposed at the non-discharging position;

Fig. 4 is a sectional view of the preferred embodiment, illustrating how the valve tube is disposed at an open position so that the spout is disposed at the discharging position;

Fig. 5 is a perspective view of the preferred embodiment,

illustrating how water is sprayed downwardly from the spout to wash the hands of a user; and

Fig. 6 is a side view of the preferred embodiment, illustrating how the spout is rotated from the discharging position to the non-discharging position.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to Figs. 1, 2, and 3, the preferred embodiment of a faucet according to this invention is shown to include a T-shaped hollow faucet body 10, a valve tube 20, a retaining member 30, and a discharge spout 40.

The faucet body 10 includes a closed end 11, an open end 12 opposite to the closed end 11 and having an internal thread 121, and a water inlet 13 disposed between the closed end 11 and the open end 12 so that water can be introduced from a water source (not shown) into the faucet body 10 through the water inlet 13.

The valve tube 20 is journaled within the faucet body 10, and includes a large-diameter tube portion 21, a small-diameter tube portion 22, a closed end 23 adjacent to the closed end 11 of the faucet body 10, an open end 24 extending outwardly of the open end 12 of the faucet body 10, a central hole 241 formed through the valve tube 20, and an opening 25 disposed between the closed end 23 and the open end 24. The small-diameter tube portion 22 is formed integrally with the large-diameter tube portion 21, and has an outer diameter smaller than that of the large-diameter tube portion 21 so as to define a shoulder

26 between the large-diameter tube portion 21 and the small-diameter tube portion 22.

The valve tube 20 is rotatable within the faucet body 10 to a close position shown Fig. 3, where the opening 25 in the valve tube 20 is not fluidly communicated with the water inlet 13 in the faucet body 10 so as to prevent flow of water therethrough, and an open position shown in Fig. 4, where the opening 25 in the valve tube 20 comes into alignment with the water inlet 13 in the faucet body 10 so as to allow maximum flow of water therethrough. A tubular rubber spacer 211 is sleeved around the valve tube 20, is disposed within the faucet body 10, and is in frictional contact with the faucet body 10 and the valve tube 20 such that the valve tube 20 can be retained at the close and open positions and such that a liquid-tight seal is established between the valve tube 20 and the faucet body 10.

The retaining member 30 is tubular, is sleeved on the small-diameter tube portion 22 of the valve tube 20, is adjacent to the shoulder 26 of the valve tube 20, and has an inner diameter smaller than the outer diameter of the large-diameter tube portion 21 of the valve tube 20, a hexagonal end 31, and an externally threaded end 32 engaging threadably the open end 12 of the faucet body 10 so as to permit rotation of the valve tube 20 within the faucet body 10 and so as to prevent movement of the valve tube 20 within the faucet body 10.

The spout 40 includes an open coupling end 41 connected fixedly to and in fluid communication with the open end 24 of the valve tube 20, and an open discharge end 42 having an end surface that is formed with a water outlet 43 (see Fig. 3). The coupling end 41 of the spout 40 is shaped as a sleeve, is disposed around the open end 24 of the valve tube 20, and has an inlet 411 in fluid communication with the central hole 241 in the valve tube 20. Each of the open end 24 of the valve tube 20 and the coupling end 41 of the spout 40 is formed with two pin holes 242, 412. The spout 40 further includes two lock pins (P), each of which extends through a respective one of the pin holes 412 in the spout 40 and into a respective one of the pin holes 242 in the valve tube 20 so as to interconnect the spout 40 and the valve tube 20 fixedly.

The spout 40 is rotatable about the valve tube 20 to a non-discharging position (A) (see Figs. 2, 5, and 6), where the valve tube 20 is disposed at the close position shown in Fig. 3 so as to prevent flow of water from the discharge end 42 of the spout 40, and a discharging position (B) (see Figs. 2, 5, and 6), where the valve tube 20 is disposed at the open position shown in Fig. 4, where a maximum amount of water can be discharged downwardly from the spout 40, and where the discharge end 42 can be pushed upwardly to turn the spout 40 to the non-discharging position (A). As such, the spout 40 serves as a valve lever.

A counterweight 44 is connected fixedly to the coupling end 41 of the spout 40 such that balance of the spout 40 can be maintained when the spout 40 is disposed at either of the non-discharging position (A) and the discharging position (B).

The spout 40 further includes a hollow cylindrical spray head 45 that is connected threadedly to the discharging end 41 of the spout 40 and that is formed with a porous end wall 451.

A first O-ring (A1) is sleeved around the small-diameter tube portion 22 of the valve tube 20, and is clamped between the shoulder 26 and the retaining member 30. A second O-ring (A2) is disposed in the coupling end 41 of the spout 40, and is clamped between the valve tube 20 and a radially and inwardly extending flange 412 of the spout 40 such that a liquid-tight seal is established therebetween.

Referring to Fig. 5, when the spout 40 is moved to the discharging position (B), the user can wash his/her hands under the spray head 45.

Referring to Fig. 6, after washing, the user can push the spray head 45 upwardly with a thumb of one hand to turn the spout 40 to the non-discharging position (A). When the spout 40 is being turned upward from the discharging position (B) to the non-discharging position (A), water flow from the water inlet 13 through the opening 25 diminishes gradually so that there is still some water flowing out of the spray head 45 onto the thumb. As such,

contamination of the hands of the user after washing due to contact with the spray head 45 can be prevented. The object of this invention can be therefore achieved.

5 With this invention thus explained, it is apparent that numerous modifications and variations can be made without departing from the scope and spirit of this invention. It is therefore intended that this invention be limited only as indicated by the appended claims.